portion of the globe its tendency is to push in that part of the scleral or corneal coat, and secondarily there will be a tendency of the neighboring portions of the coat to tilt out. In the uninjured parts of the globe this tendency to tilting out is met and restrained by the inclination of all other parts of the coat to preserve their shape. But with the free edges of flap and stump this restraining influence is removed and a tilting out of the edge may result. Only under such conditions, or by the direct thrusting in of the free edge of the corneal flap, can the overriding of the stump occur.

But even if external pressure be applied to the globe with practical uniformity, its results will be scarcely better. There being no intraocular tension, such pressure is resisted only by the resilience of the walls of the globe, and by those walls is transmitted as by a perfect arch, until it reaches the point at which the arch is broken by the corneal incision. Here the tendency is to force the two lips of the incision together, and the result is just such a displacement of the lips of the wound as has been found to occur in the large majority of such eyes examined, an overriding of the flap upon the stump.

Probably the only reason that would be given for pressure on the globe after cataract extraction, at least by the majority of surgeons, would be that it would aid in securing the fixation and complete rest of the globe. The bandage may aid the fixation of the eye in three ways. By preventing the use of the eyes it removes the chief inducement to turn them from place. But for this purpose it is, of course, essential that both eyes be bandaged. Then the constant contact of a dressing with the lids probably exerts a very important reflex influence, restricting those movements of the eyes that are liable to be made in response to sounds from various directions, or in response to impressions made on other senses. Finally the bandage may, by pressure, mechanically resist the movement of the eye; though I believe it can never altogether prevent it. But the restraint of movement by the application of mechanical force to the globe does the very harm that restraint of movement is hoped to prevent. If, in spite of pressure, movement of the globe occurs beneath the bandage, no matter how evenly it is applied, the area of its application, and points of greatest force must vary with every movement of the globe. Pressure simply becomes a sort of massage. And if massage is to be applied, can it not be more rationally done than by the chance movements of the bandaged globe? It is thus evident that in the first stage of healing, until the wound is quite closed, pressure can only do harm. After the complete closing of the wound there is a distinct tendency to bulging, which pressure might be expected to somewhat counteract if it could be applied steadily to the point of deficient resistance on the part of the coat, and to that point alone. But such use of pressure is manifestly impracticable.

To recapitulate. At the completion of a cataract extraction, or other operations involving a corneal section, an equilibrium without tension is established, while the resiliency of the sclerocorneal coat tends to keep the lips of the incision in the best possible apposition.

That pressure on the globe can only aid in fixing it by doing it mechanical violence, and by the ocular movements is transformed into a species of massage; and whether such pressure be uneven or uniform, it can only tend to cause the relative displacement of the edges of the wound.

Therefore, the primary consideration in the application of a dressing after such an operation is the avoidance of all pressure.

TO WHAT EXTENT ARE PERSONAL RESTRAINTS ESSENTIAL DURING HEALING OF CORNEAL WOUNDS.

Read before the Section of Ophthalmology of the American Medical Association, at its Meeting in Washington, D. C., May, 1891.

BY T. E. MURRELL, M.D.,
OF LITTLE ROCK, ARK.

It is still considered by the majority of ophthalmic surgeons that when the cornea has been extensively incised complete restraint of both eyes, and of the body as well, for some days is essential to safe and perfect healing. This applies to operations on iris or lens requiring opening of the aqueous chamber by a more or less extensive section. Furthermore, in compliance with this opinion, it is considered that such operations should be performed in the room the patient is to occupy in order that as little disturbance of person as possible shall be created. Based upon an individual experience now extending over four year's careful tests and observation, I feel authorized in entering a remonstrance against these iron-bound rules, and take this occasion to offer a plea for greater personal liberties to those subjected to iridectomy or cataract extraction.

It is true, very plausible arguments can be produced in defense of the prevalent custom of bandages, darkened rooms and confinement in bed, but one solitary fact is worth a hundred theories, and experience and observation must always take precedence of abstract reasoning. The restraints ordinarily put upon those who have submitted to an extraction of the lens are often very trying, especially to the aged, the depressing effects of which doubtless often cause tardy healing of the wound. So much do some persons dread confinement in the dark and exclusion of both eyes from sight that under such methods I have sometimes found it very difficult to get the patient's consent

to submit to an operation on the second eye, especially if satisfactory vision has been obtained in the first. But with the very slight restraint I now put upon my patients they regard the operation for cataract and the after treatment as a trivial matter in so far as personal discomfort is concerned.

I had already begun to draw the reins more loosely as regards the points at issue when I became acquainted with Dr. Michell and his methods. I was so impressed with the simplicity as well as philosophy of his dressing and management of his operated cases that I at once adopted his methods, and for a period of four years have used no other.

His statement that he made simple iridectomy an office operation was a surprise to me, but I received it with confidence, and after thorough trial became so convinced of its entire safety that I now no more hesitate to perform an iridectomy in my office, and let the patient walk or ride home than I would to make a paracentesis of the cornea.

Dr. Michell was much more cautious, however, with his extractions, whom he confined to bed a number of days. It occurred to me if the stringent rules I had hitherto followed with my iridectomy cases, which were managed with almost as much caution as an extraction, were unnecessary, then they were likewise, perhaps, to a large extent at least, unnecessary in the latter also. At any rate I determined to make a test of it. I had been in the habit of taking the medical class of our college with me to the room where the patient was to remain, often in distant parts of the city—we then having no satisfactory hospital arrangements—to witness operations for cataract. The next case that applied for relief, I performed the operation in the college building and sent the patient, an old negro man, home, a mile and a half, in an express wagon. The case did as nicely as any I ever had. Encouraged by this I repeated it over and over again with like satisfactory results, leaving to the patients to get home in any manner they could, they sometimes walking a mile or two, always having an attendant. In no instance was there any irregularity in the progress of the cases that I could attribute to this cause.

I had considerable misgivings, however, on one occasion when, during an extraction, a good deal of fluid vitreous was lost. I feared that with only a strip of adhesive plaster over the lids and the patient going more than a mile to his home the balance of the vitreous would run out. But it was not the case. There was no more lost after dressing the eye, healing was by primary union and the result was quite satisfactory.

With such experiences as these, I felt warranted in taking like liberties in my private practice. About this time Dr. Cheatham published a report of cases operated at the medical college and sent home to different parts of the city, all of whom did well.

Dr. Chisolm also made known the fact that he was in the habit of operating in a room downstairs and requiring his patients to walk up-stairs to their room, and that he had seen no harm from it. He furthermore took the initiative in leaving the unoperated eye free, a great pleasure to the patient, and not attended by any bad results. With such corroborative testimony I no longer hesitated to boldly operate in my office on any and all cases that applied, sending them to their homes or boarding houses afterwards. It was with some misgivings that I first tried leaving the unoperated eye open, especially if it had fair vision, on the principle that one eye cannot move without associated movements of the other. Trial of this convinced me in time that it was safe, and I now very rarely close both eyes. Owing to the better facilities to be had in a specially prepared office, and the more readily obtained assistance, besides the greater convenience and saving of time to the surgeon, there is a great gain in performing all operations in ones office. For two years past I have required all my iridectomy and cataract cases, as well as all others, to come to my office for operation, unless, as only occasionally happens, the patient, or family, insists that the operation be done at home. After an iridectomy or extraction only the operated eye is closed by a strip of isinglass plaster, and the patient is sent home in a carriage, or in a street car, or if not very far is allowed to walk home, being always accompanied by another person. He is instructed when he gets home to lie down or sit up as he may prefer, but to keep quiet, and to remain in his room, and not to use the unobscured eye except for some particular necessity, that is, he is not to attempt to read or use it unduly. I find but little disposition on the part of most persons to abuse these privileges.

It will occasionally happen, however, that they do, just as unruly patients will sometimes tear off the bandages.

I made an extraction in my office last winter on an old lady and sent her home, leaving the unoperated eye, which had quite good vision, free and with which she saw her way home. When I called to see her the next day she was not in her room but was in another part of the house quite busy about her domestic duties. She informed me she had been thus engaged from the time she got home from my office and was innocent of there being any harm in it. I at once enjoined her not to attempt the like again, and to remain in her room. Fortunately no harm came from her indiscretion. While such imprudence might lead to dire results, at the same time several similar instances have taught me that there is a great deal of unnecessary fear of

any and all personal liberties after important operations on the eye, that for cataract in particular.

The great secret, in my opinion, lies in a well performed operation in a properly selected case, then closing the lids naturally over the globe and retaining them there by the simplest means, and molesting the eye as little as possible until union of the corneal section has taken place and all will have been done that it is in the power of the surgeon to do to aid Nature in her efforts at repair. As to confinement in bed, the exclusion of light, closely confining both eyes, and any and all personal restraints that bring discomfort, they play no important part in the final results and are both cruel to the patient and useless.

While allowing my patients these greater liberties and additional comforts I have at the same time seen no unsatisfactory results that could in any way be attributed to them.

In fact I have had fewer complications after extraction since doing them in my office than ever before in my experience.

I feel confident that a fair and reasonable trial of the methods I have here described will convince any one that they are not only safe, but that he will be greatly pleased with the convenience and satisfaction they will afford him, while he will have added the gratitude and appreciation of his patients for converting such hitherto formidable operations into seemingly simple ones.

REMARKS ON THE NEED OF MORE EFFICIENT PROTECTION OF THE EYE AFTER CATARACT EXTRACTION, AND AN IMPROVED APPARATUS FOR THE PURPOSE.

Read in the Section of Ophthalmology, at the Forty-second Annual Meeting of the American Medical Association, held at Washington, D. C., May 5-8, 1891.

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Perfect coaptation and support of the corneal flaps, freedom from any form of pressure that may cause gaping of the lips, or reopening of the wound, and perfect rest of the eye, are the objects mainly in view in adopting any form of dressing after the extraction of cataract. That any imperfect coaptation, or motion of the lips of the wound will interfere with its speedy and perfect union, and, that every reopening of the wound retards recovery and subjects the eye to dangers from infection and inflammatory reaction, are propositions so axiomatic that no one will dispute them. They seem to be universally received principles, though in practice we hardly take the precautions we ought to observe in order to secure our patients against these sources of danger. Mackenzie in his chapter on the after-treatment of extraction, writes as follows:

"A careful assistant or experienced nurse, sitting constantly by the bedside for the first forty-eight hours, and for several succeeding nights, ought to attentively watch the patient when he wakes, and taking care especially, that he does not turn round suddenly upon the eye which has been cut or put up his hand to rub it. If there is any particular reason to dread the latter accident, it may be proper to muffle the patient's hands and pin them down by his sides.

"The length of time during which the patient is to be kept in bed, is a point upon which there has been a wide diversity of practice. It would appear that Wenzel was at one time in the habit of confining his patients to their backs, without change of posture for a fortnight or three weeks, but that afterwards he shortened the period of confinement to eight or ten days. Mr. Phipps, on the other hand, examined the eyes on the morning after the operation, applied a shade and allowed the patient to rise.[1] A middle course appears to be the most judicious. The incision may be looked at the third day. On the fourth day the patient may be allowed to sit up for a short time. On the fifth the eye may be fairly examined, but immediately afterward covered with a shade. In eight or ten days the patient may be allowed to look at large objects and look about the room."[2]

Lawrence says: "The coverings of the eye should be light; a soft rag doubled and wetted in water, may be gently bound on the eye by a single narrow linen band, and the other may be covered in the same way. Recollect that the eye is naturally open to the air, and that a sound eye would be heated and rendered uneasy if it were bandaged up.

"The method followed by Beer and most of the German operators, of closing the lids by a strip of sticking plaster carried from the forehead to the cheek seems to me most objectionable.

"We must not, therefore, regard it as a rule, that the patient is to be bandaged. The light covering I have recommended is rather employed to keep the eye quiet, and guard it from any slight accident, than as a measure absolutely necessary; on the latter account it is proper to have the eye covered during the night, but it may be left open, or at least with thin wet rags only on it when the patient is awake."[3]

This open method of treatment seems to have been quite common until von Graefe advocated the use of the pressure bandage in connection

[1] On the Treatment of Patients after the Operation of Cataract, by Jonathan Wathel Phipps. London. 1792.
[2] Diseases of the Eye, by William Mackenzie, Edition of 1833. Boston, Carter, Hendee & Co.
[3] A Treatise on the Disease of the Eye, by W. Lawrence, F.R.S. London, 1833. Pp. 425 and 426.